CUSTOMER NO.: 24737

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of P. MAAS	)	Examiner: G. DISTEFANO
	)	Art Unit: 2175
Serial No.: 10/580,501	)	
	)	Confirmation: 2333
Filed: May 23, 2006	)	
For: **SYSTEM FOR DISPLAYING IMAGES WITH MULTIPLE ATTRIBUTES**	)	
Attorney Docket No.: NL 031427 / PKRX 2 00125	)	Cleveland, OH 44114 January 4, 2010

<u>37 CFR 1.132 DECLARATION</u>

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, the undersigned, Petrus C.F. MAAS, of Veenpluis 4-6, Best, THE NETHERLANDS, hereby declare as follows:

I have a Master of Science degree in Applied Physics from the Delft University of Technology. I was an Expert in User Interface Design for Koninklijke Philips Electronics, N.V. from 2000 to 2007.

I am the inventor of US application Serial No. 10/580,501.

When working with diagnostic image data, 3D data sets are commonly encountered, particularly a stack of two-dimensional diagnostic images with each of the diagnostic images in the stack spatially offset from neighboring 2D images by a short distance, e.g., 1 mm – 1 cm. When reviewing the diagnostic images, the radiologist typically reviews a plurality of the two-dimensional images in the stack. Scrolling through a given one of the 2D images is readily done by moving a manipulation unit along a horizontal or x-axis to move the given image from side to

side or along a vertical or y-axis to move the given image upward and downward. However, scrolling or otherwise moving through the stack of 2D images into and out of the plane of the paper along a z-axis has been problematic.

The Examiner cites Gilligan (US 5,374,942) which discloses moving a mouse in a circular direction to designate a third or z-axis (column 7, line 60 – column 8, line 6). However, the circular motion does not provide a satisfactory technique for scrolling along the z-axis.

It is important to scroll precise distances in the z-direction, without jumping in the x or y-directions during z-direction scrolling. When scrolling through a stack of diagnostic images along the z-axis, the radiologist typically expects to see the same structure in the same x,y position in each 2D image. This enables the radiologist to view a structure of interest, such as a tumor, organ, or the like, successively in each of a plurality of closely spaced planes. If the structure of interest were to shift along the x or y-axes as the radiologist stepped to successive images, the radiologist would be misled regarding the 3D shape of the structure.

Scrolling in the z-direction should be independent of scrolling in the x or y-directions. In scrolling through the stack of diagnostic images, it is important to keep the x and y-positions constant. The horizontal or vertical motions of a mouse in the early stages of drawing circle can leave the processor to believe that the user's intent is a small shift in the x or y-direction and providing such scrolling in the x or y-direction rather than holding them constant.

One advantage of moving the manipulation unit diagonally is that the intended movement is recognized by the processor almost immediately with very little motion of the manipulation unit. Complex manipulation unit patterns make it harder to determine the user's intent. When moving a mouse in a circle, the first component of motion is often along the x or y-axis, which could result in the resultant image being shifted in the x or y-direction. Until the user is moved a substantially full circle, the processor may be confused regarding the user's intent. Rapidly recognizing the user's intent provides rapid feedback to the viewer. The user receives substantially instantaneous feedback which facilitates precise, small movement along the z-axis.

When scrolling through a large stack of images, the radiologist wants to have relatively fine resolution to be easily able to move in small increments, such as single slices. Accordingly, it is important that the movement of the manipulation unit be recognized quickly by the processor in response to a small amount of manipulation unit movement. As illustrated in FIGURE 6 of the present application, movement within the region F to scroll in the z-direction can be differentiated almost instantly by the processor from the region U for scrolling in the y-direction, or the region R for scrolling in the x-direction. In this manner, the image viewing application can determine the intended movement of the manipulation movement in a very early stage of user interaction such that the result of the interaction is almost immediately visible feedback to the user providing meaningful user feedback. More complex patterns make it harder to determine the user intent, creating significant time delays before providing user feedback.

Moving on a diagonal is quick to learn. Further, it is intuitive which direction along the diagonal moves into the plane of the display and which direction moves out of the plane. Moving in a circle is not intuitive. The reader is invited to ask themselves whether clockwise or counterclockwise connotes movement into the plane of the display.

Moving on a diagonal is not a mere matter of choice. Rather, it produces superior results. Moving in a diagonal responds more quickly, provides faster user feedback, enables the intent of the user to be determined quickly, is independent of x and y-scrolling, is less apt to result in movement of the image along the x or y-axes before the system recognizes the user's intent, and the like.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed at **Best (Netherlands)** on this **Monday** of **January 4, 2009**.

Respectfully submitted,

Petrus C.F. MAAS

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PETER MAAS

PERSONAL DETAILS

Name:	Peter (PCF) Maas
Birth Date:	June 3, 1965
Nationality:	Dutch
Languages:	Dutch, English, German, French
Education:	Master of Science in Applied Physics

EMPLOYMENT

1997 – 2010 Philips Medical Systems Nederland N.V. Eindhoven
PMG Magnetic Resonance

***Senior Software Engineer / Designer** (2007 –)*

- In a software / hardware project responsible for the software design and implementation of a Coil Selection user interface. Responsibilities include software requirements management, software architecture, design, implementation and logistics.

***Domain Expert UI Design & Usability** (2002 – 2007)*

Responsible for:

- UI design
  Create solutions to enhance 'ease of use'. Make proto-types of new solutions in order to communicate with the customer (mostly applications specialists and clinical scientists). Consolidate solutions and *patent* them when possible.
- UI vision and predevelopment
  Pre-develop (and proto type) new concepts and ideas. Contribute to the UI roadmap for MR.
- Knowledge management
  Follow technological developments through literature, seminars, conferences and the Internet. Set and maintain up a knowledge network within PMS (Best, Cleveland and Haifa).
- UI consistency
  Define and maintain UI consistency guidelines in accordance with current PMS UI harmonization standards.

***Software usability engineer** (2000 – 2002)*

Working for the Clinical Post-processing and User Interface (CPUI) group as a usability engineer on the following subjects:

- Introduction of several usability aspects in post-processing software.
- UI Design and architecture of a new user interface (platform) for MR on a C# Winforms .Net platform.
- User Interface design for clinical post-processing of images.

Software engineer (1997 – 2000)

Working for the Clinical Viewing Platform group as a software engineer. Projects were mainly User Interface related on a DEC VMS / X Windows / MOTIF platform.

1995 - 1997 ICT Automatisering B.V. Eindhoven

Software engineer

Placed by ICT at PMS-MR, as a member of the External Interfaces group.

1994 Random Computer Services Tilburg

Software programmer

Design, implementation, installation and maintenance of small (mostly administrative) software packages on demand.

EDUCATION

1985 - 1993 Delft University of Technology Delft
Faculty of Applied Physics

Master of Science in Applied Physics

As member of the Computational Physics group, I worked on a thesis titled: *"Design and Implementation of Visualization Methods for Traffic Assignment Models"*.

The Computational Physics group aims to develop and implement models for the simulation of physical phenomena. As a spin-off, my research subject was to design and implement visualization methods and techniques applied to traffic assignment models. This resulted in a software package called X Traffic Simulator & Visualizer, which was utilized during further research by the Faculty of Civil Engineering, later published in "Delft Integral".

1977 – 1985 MAVO-4, HAVO-5, Atheneum Raamsdonksveer

SOFTWARE COMPETENCIES

Platforms:

MFC, Win32, WinForms, .NET, WPF, OpenGL, DirectX/Direct3D, DEC Windows, X11, MOTIF

Software engineering:

Software design (OOAD), User interface design & Usability engineering
Object oriented modeling and design, design patterns and anti patterns
Requirements management
Microsoft Certified Solution Developer / Microsoft Certified Professional
C#, Java, (un)managed C++, C, Basic, UIL, Pascal and ASM

Process:

Familiar with project management.
Team leadership.
Certified in the Personal Software Process (learn from experience).